

THE RICHBÄCHER LETTER

Monthly Analysis of Currencies and Credit Markets

NUMBER 409

OCTOBER 2008

But, backing away from the ethereal, it does seem as if our formal models and even our judgmental analyses routinely fail to capture the sorts of ‘nonlinearities’ that come into play once the economy starts to decelerate appreciably...

I think that at least part of the problem relates to the fragilities that typically develop during the expansion phase of the business cycle... Loan losses and capital impairment, their seeds having been sown in the enthusiasms of the preceding boom, have often created credit crunches that exacerbate the multiplier-accelerator effects damping private investment. These difficulties can be especially great if banks and other financial institutions have financed a construction boom, because an overhang of supply in real estate markets — where the assets collateralizing loans are immobile and long lived — is not easily absorbed.

— Michael Prell, Federal Reserve staff economist, May 16, 2000,
Federal Open Market Committee meeting transcript

DOWN THE RABBIT HOLE

Familiarity with financial history is generally considered a handicap during roaring bull markets. Any history longer than a 3-, 6- or 12-month price chart is unquestionably dangerous to your relative financial wealth. In the aftermath of an asset bubble collapse, perhaps the opposite can be said to hold true.

As this letter goes to print, we have witnessed a month in which Fannie Mae and Freddie Mac, two bulwarks of the mortgage market, have been renationalized; Lehman Brothers investment bank has pursued bankruptcy; the broker dealer Merrill Lynch has been merged with Bank of America in a style reminiscent of a shotgun wedding; AIG, an insurance company deeply involved in the credit default swap market, is now owned by the Federal Reserve (which, by the way, has no jurisdiction over insurance companies); the Fed has unilaterally endowed itself with the power to acquire equities through one of its special new liquidity facilities; and Treasury Secretary Paulson has demanded that U.S. taxpayers purchase an open-ended amount of securities from the likes of his former employer — securities which, by the way, are so illiquid that financial markets cannot price them. Simply put, like *Alice in Wonderland*, we have dropped down the rabbit hole that typically opens up when a financial crisis erupts just as an economy is heading into the most severe portion of a recession. Except this is the deepest rabbit hole we have chased Alice and the March Hare down since the Great Depression.

Not knowing the rules of the rabbit hole will prove very costly. Mainstream economic theory has little or no room for the various historical episodes of time spent in the rabbit hole. Nor does conventional financial theory help here. Nor do the Taylor rule/inflation targeting dictates of contemporary central banking doctrine have much room for coping with rabbit hole economics. Yet rabbit holes do exist, and some independent-thinking investors, unconventional, off-the-beaten-path economists, and realistic central bank practitioners have developed insights over the years of macrofinancial crises on plausible ways to negotiate a way through these rabbit holes.

In the following *Richebächer Letter*, we will identify the multilayered, intertwined excesses that developed during the prior business cycle expansion and asset market advances. While the suppression of the short run interest rate set by the Federal Reserve no doubt played a role in the build up of the real economy and financial excesses now being unwound, we will argue it is absurd to ignore the role played by the overreliance on what at this point may only be euphemistically called market discipline.

As the recent financial crisis is demonstrating all too clearly, by the time investors discover (or, more accurately, admit) that financial assets have been grossly mispriced, the damage is deep and, in some cases, irretrievable. We conclude that on top of the downsizing, rationalization and renewed consolidation of the financial sector already under way, the likelihood of a wave of re-regulation of the financial sector is building. No doubt much of the capital market liberalization of the past quarter century or so will be reversed, and the financial system will be radically simplified. In such an environment, barring an acceleration of technological, product or organizational advances, in the spirit of Joseph Schumpeter's gales of creative destruction, the forces of stagnation and deflation will pose a larger risk than those of overheating and inflation. Credit distortions to economic growth will be harder to come by.

THE PARTICULAR CHALLENGE OF CLEARING AWAY A HOUSING BUBBLE

A little over eight years ago, heading into the rupture of the New Economy bubble, Fed staff economist Michael Prell laid out the insights quoted at the start of this letter in his last Federal Open Market Committee (FOMC) meeting before his retirement. It is safe to assume a career's worth of learning may be embedded in his suggestions — they may represent a parting shot of sorts, meant for the sake of posterity.

Prell's point was simple. But from the perspective of contemporary views, which hold that, *first*, the central bank eventually strangles all economic expansions with interest rate hikes to combat accelerating inflation, and *second*, yet equally important, the central bank can miraculously, in the recessionary aftermath, find the appropriate inflation-adjusted ("real") interest rate to restart economic expansion, his point was both profound, and profoundly controversial.

Like the Austrian School, Prell noted that the distortions that need to be worked out in the recession phase of the business cycle are the result of inconsistencies and excesses built up during the expansion phase. Like the Austrians, Prell understood that working out these distortions during the recession can be more than a matter of instantaneous price adjustments. The workout phase is messy, and the impact on the willingness of all kinds of economic agents to take risk — especially lenders and borrowers — can be long lasting, with contractionary effects on the real economy.

Unlike the New Classics, Prell discarded the notion that real economic growth — the expansion of the supply of goods and services available for sale and use — is something largely divorced from finance and asset market conditions. Real growth requires more than access to raw materials, technological prowess, capital equipment and a labor force. Real growth must be financed, and finance is more than just a veil on the exchange of quantities of goods and services. Asset prices and credit conditions matter for real growth in the real world. Consequently, loan losses and capital impairment realized by creditors and investors can make the recovery of economic activity especially problematic, regardless of where the Fed decides to eventually set the real fed funds rate.

THE RICHBÄCHER LETTER

In Memory of Dr. Kurt Richebächer



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The Richebacher Letter is published monthly by Agora Financial LLC, 808 St. Paul Street, Baltimore, MD 21202-2406, www.agorafinancial.com. Subscriptions are US \$497 per year for U.S. residents. **POSTMASTER:** Send address changes to Agora Financial LLC, Customer Service Department, PO Box 960, Frederick, MD 21705. Customer Service: 800-708-1020 or 410-454-0499; e-mail: customerservice@agorafinancial.com.

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Like Kurt Richebächer and many developers of the Austrian School, and like Irving Fisher, John Maynard Keynes and Hy Minsky, Prell recognized the effects of asset prices and credit cycles on business cycles. From this perspective, where finance matters to real economic activity, losses in the specific areas where excesses occurred dampen the willingness and ability of many other creditors to lend. Perceptions of creditworthiness and the appetite for taking on new risks are dampened outside the sector initially in trouble. The pace of economic activity outside of the particular overbuilt or overextended segment of the economy is dampened by these contagion effects on portfolio preferences and the capacity to borrow.

Multiplier effects, in Prell's warning, refer to the likelihood that the pullback in spending by the originally overbuilt sector will tend to reduce income growth for other sectors. Accelerator effects refer to the reduction in the need for extending production capacity when final consumer demand growth is falling away. In the language of Austrian School adherents, the ripple effects beyond the adjustments required in the originally overbuilt sector — that is, the segment of the structure of production most distorted by rampant credit creation — can take the form of a “secondary depression” as a credit crisis spreads, and spending dependent upon external finance dries up accordingly.

Prell's closing sentence, however, represents the pith of his warning to the fellow attendees at the Federal Open Market Committee meeting in 2000. Prell presciently warned the following situation is best if avoided altogether (emphasis added):

*These difficulties can be especially great if banks and other financial institutions have financed a construction boom, because **an overhang of supply in real estate markets — where the assets collateralizing loans are immobile and long-lived — is not easily absorbed.***

Prell understood very clearly, in other words, that if an asset bubble and credit boom were allowed to expand to the point of rupture, then clearing out the distortions to the tangible capital stock (that is, to the actual structure of production) would prove most difficult if the tangible asset that had been overbuilt was particularly long lived and not easily relocated.

Short of public infrastructure like highways, bridges and water systems, and short of office buildings and manufacturing plants, housing is the most durable, most difficult-to-transport tangible asset around. Prell warned that, because of these inherent characteristics, clearing a housing glut is no easy task. The time it takes a house to depreciate dwarfs the 2–3-year technological obsolescence of a Cisco router or a Dell laptop computer. Cisco routers and Dell laptops can be packed and shipped; houses, less easily so. Implicitly, Prell may have been warning his colleagues that trying to resolve a tech and telecom equipment bubble by allowing a housing bubble to inflate would prove to be a rather dangerous bargain with the devil.

Curiously, a lifetime ago, Keynes also focused on the unique role of the durability of tangible capital assets in determining the length of a recession. Like the Austrians, Keynes focused on a capital spending or investment-driven business cycle. Keynes also assigned a high degree of influence of credit market and asset market conditions on capital spending. In his widely ignored chapter on trade cycles in the *General Theory of Employment, Interest and Money*, Keynes noted the following:

But the interval of time, which will have to elapse before the shortage of capital through use, decay, and obsolescence causes a sufficiently obvious scarcity to increase the marginal efficiency, may be a somewhat stable function of the average durability of capital in a given epoch.

The time it takes a house to depreciate dwarfs the 2–3-year technological obsolescence of a Cisco router or a Dell laptop computer. Cisco routers and Dell laptops can be packed and shipped; houses, less easily so.

It may, of course, be the case — indeed, it is likely to be — that the illusions of the boom cause particular types of capital assets to be produced in such excessive abundance that some part of the output is, on any criterion, a waste of resources... It leads, that is to say, to misdirected investment... When the disillusion comes, this expectation is replaced by a contrary ‘error of pessimism’... and the resulting collapse of new investment then leads to a state of unemployment in which the investments, which would have yielded 2 percent in conditions of full employment, in fact yield less than nothing. We reach a condition where there is a shortage of houses, but where nevertheless no one can afford to live in the houses that are there.

Any overbuilding of the capital stock relative to final demand, in both the models of Keynes and the Austrians, leads to an eventual reduction in the rate of return on that form of tangible capital. The incentive to expand investment in that type of tangible capital will not improve until the relative scarcity of that capital equipment or structure increases, thereby improving current and future profit prospects, or until the cost of borrowing to purchase those capital goods falls. Barring a revival in final demand growth, depreciation of the existing capital stock is therefore required to produce that relative scarcity and the associated improvement in expected rates of return. Preferably, the ensuing depreciation proceeds quickly, preferably faster than the reduction of income growth which follows any contraction of capital spending.

Housing, being one of the slowest depreciating tangible assets in the capital stock, is consequently a dangerous choice of asset classes upon which to cultivate, or at least tolerate, asset bubbles. The issue is not so much the “roundaboutness” or the “time structure,” as the Austrians put it, of the production process required in expanding the housing stock itself, although they too may have a role to play in the generation of economic discontinuities. The issue, at least with respect to recovering from a burst asset bubble, has more to do with the actual durability, both physically and in economic value terms, of the tangible asset overbuilt during the bubble.

Where capital spending is “misdirected” in Keynes’ language, or where the time structure of production is most distorted by financing conditions in Austrian language, matters quite a bit. Recovering from the overbuilding of extremely durable, slow-to-depreciate components of the capital stock is always more problematic. Prell distinctly understood this nuance. Former Fed Chairman Alan Greenspan clearly did not — or if he did, he found it more convenient to ignore this simple truth while making his next bargain with the devil, replacing an equity bubble with a housing bubble. Perhaps current Fed Chairman Ben Bernanke is at this very moment relearning Prell’s Austrian and Keynesian insight, although he is learning just by the seat of his pants.

THE FIVE LAYERS OF DISTORTIONS THAT MUST BE UNWOUND FOLLOWING AN ASSET BUBBLE

A complete and coherent macroeconomics model must be willing to recognize the dynamics governing the evolution of income statements and balance sheets among different sectors and segments of the economy. It must marry financial and monetary developments to real economic conditions, and not remain stuck in the blind alley of viewing economics as a set of barter transactions, with money simply acting as a veil over these transactions. In doing so, the richness of any coherent macroeconomics model will tend to arise in the myriad ways that financial and real economy developments interact. Dr. Richebächer and the Austrian School always got this — so too did Keynes and Minsky. Fisher had to lose a fortune and his house in the Great Depression to get it.

During asset bubbles or credit excesses, multiple sets of distortions tend to arise. *First*, there is a distortion to spending patterns, both in terms of the mix of products purchased and in the propensity to spend out of income flows. Desired saving rates fall and the structure of production is skewed toward particular industries.

Second, these production and spending flow imbalances will, over time, accumulate as distortions to the capital stock. Higher asset prices, lower credit costs, greater credit availability and greater profitability will send the necessary signals to both increase the capital stock and shift the mix of the capital stock toward the sector favored

by asset price or credit market developments.

Third, asset bubbles and credit booms will directly change the size and mix of wealth portfolios as the market value of a particular asset class balloons during an asset bubble and as the explosion of newly issued liabilities in a credit boom takes up a greater share of balance sheets. Indirectly, sustained deficit spending by any one sector will add to the issuance of new liabilities, as will sustained build outs in any one particular sector of the capital stock.

So under conditions of financial market distortions — whether in the form of asset bubbles or credit booms (the two tend to be closely related) — one set of disturbances shows up in income and expenditure flows and another two set of disturbances show up in the tangible or productive capital stock and in the stock of financial assets held in portfolios by individuals and financial institutions.

We can literally trace out these three distortions that ultimately must be resolved. By doing so, we can reveal the map that must be understood before questions about the depth and duration of this period of macrofinancial adjustment can be answered. Unfortunately, it is all too apparent that this landscape is poorly understood by professional investors, policymakers, corporate management and mainstream economists.

Using the late '90s tech and telecom equity bubble and the more recent housing bubble and lending boom as illustrations, we can make plain as day the model of macrofinancial dynamics mostly apparent to Mises, Fisher, Keynes, Minsky and Dr. Richebächer.

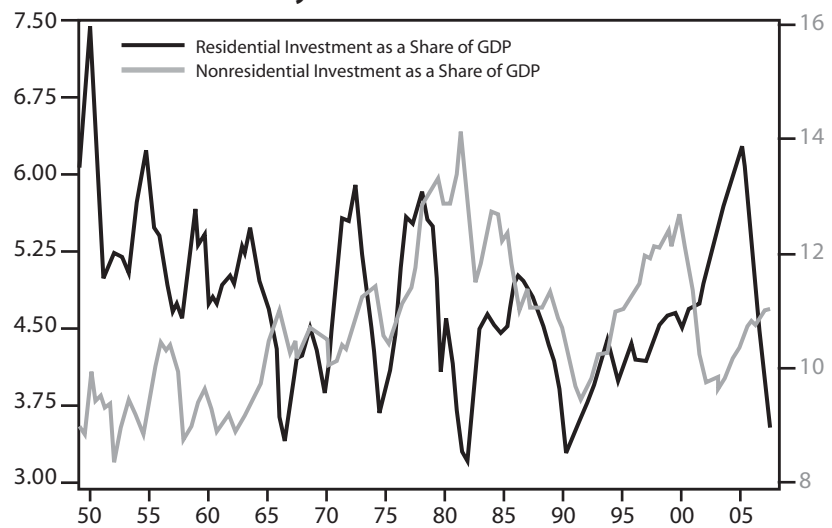
As displayed in the chart below, the equity market bubble of the late '90s led the nonresidential investment (that is, capital equipment, manufacturing plant, office buildings, software, etc.) share of GDP to a high not seen since everyone was drilling for oil in their backyards in Texas. Likewise, the recent housing bubble took the residential investment share of GDP back to levels not seen since the Korean War. In both cases, the mix of spending in the economy, and hence the mix of production in the economy, under the influence of financial market distortions, departed far from the historical norm before eventually crashing well below the historical average.

Under the influence of the late '90s equity bubble, nonfinancial firms, which historically tend to spend more than they earn (and hence tend to run a deficit in their financial balance, as external finance is required to pursue profitable expansion opportunities), were encouraged to pursue a record pace of deficit spending. Though profits and retained earnings were rich for part of the New Economy bubble, the capital spending boom on tech and telecom equipment was too big to be financed internally. Households similarly moved into a deficit spending position from their usual net saving position during the equity bubble.

However, the real surge in their propensity to spend arrived with the more recent housing bubble. Fast home price appreciation and lax lending standards led to a surge in mortgage equity withdrawal, which, in turn, allowed households to accomplish and unprecedented pace of deficit spending. Clearly, both the mix of spending and production activity and the propensity to spend out of income flows changed when households and firms participated in asset bubbles and credit booms.

Sustained deficit spending, whether by the government or the private sector, must be financed. Any one agent, or any one sector of the economy, can finance deficit spending by

Spending and Production Mix Departs From History and Fundamentals



Source: Haver Analytics

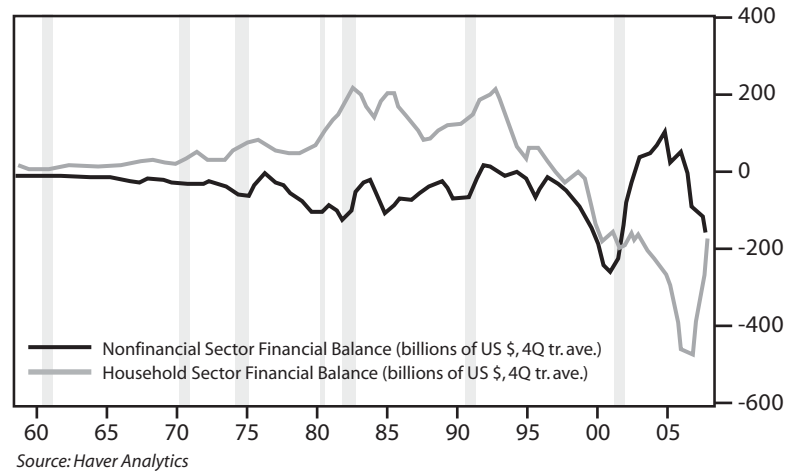
selling assets outright, running down existing cash balances or issuing liabilities. More often than not, for the obvious reasons, the last option is the preferred method of financing a run of deficit spending. Households and firms broke out to new levels of record debt issuance in the late '90s equity bubble, but it took the housing boom for households to really show the corporate sector how to leverage to the hilt.

When spending and production activity in durable assets is sustained for long enough, the mix of the installed capital stock can change shape. Overspending and overproduction in a particular durable good will build up over time as a distortion in the composition of the capital stock relative to true, underlying final demand growth prospects in that sector. Using money values, rather than inflation-adjusted or real values, there was no bulge in the late '90s for the share of the capital stock devoted to private equipment and software.

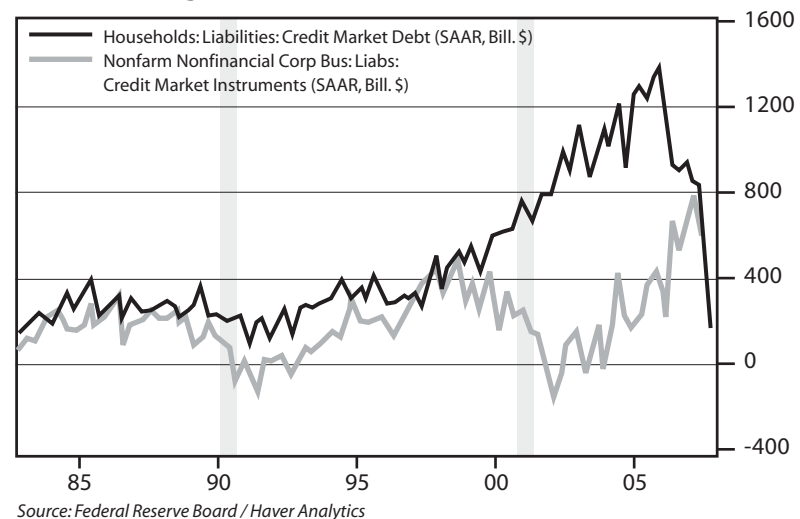
If we use inflation-adjusted values for computers and software, both subject to hedonic price deflators that Dr. Richebächer ardently criticized, there is a fivefold increase in the net capital stock in these two categories between 1995–2000, which is simply far from credible. Price deflation in tech and telecom equipment was no doubt a feature of that period of rapid innovation, but not to the degree implied by the hedonic price deflators employed by government statisticians. So if we were able to use the true price progression for tech, a significant surge in the share of the capital stock would no doubt be evident for tech and telecom equipment during the New Economy bubble.

Precisely the opposite challenge arises when we track the value of residential real estate as a share of the private capital stock. The home price boom clearly overstates the surge in the housing share of the capital stock in unit volume terms. Nevertheless, a

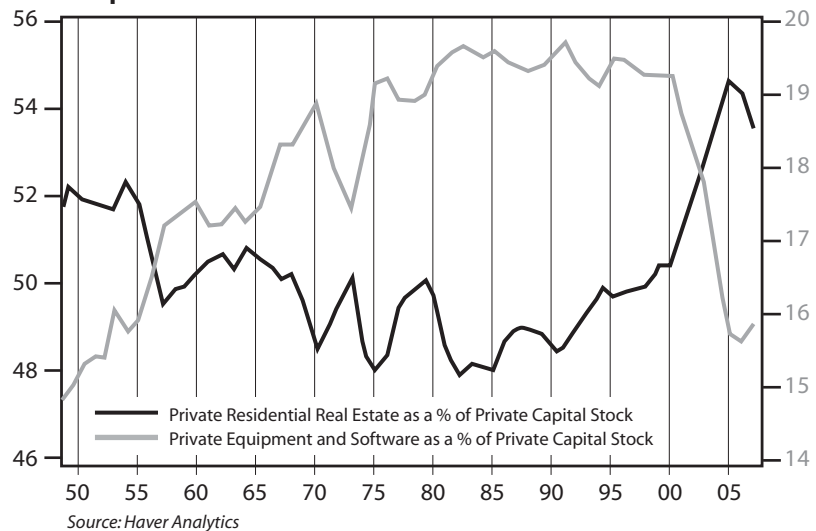
Spending Propensities out of Income Flows Were Distorted



Borrowing Propensities Likewise Distorted



Capital Stock Mix Distorted



shift in the capital mix in favor of housing, and away from private equipment and software, is undeniable.

The final distortion appears on the balance sheets of wealth-holding households. In the late '90s bubble, equity prices boomed and equity exposures on household balance sheets extended well above the historical average, and even well beyond the highs of the go-go days of the swinging '60s. Similarly, the housing boom earlier this decade took real estate exposures up to levels last seen during the steep inflation of the late '70s.

When asset bubbles burst and credit booms go bust, spending distortions tend to reverse with a rather short lag. This was made extremely clear in the collapse of capital spending following the New Economy bubble, as well as during the more recent reversal of spending on residential real estate. Financial balances adjust shortly after spending contractions emerge in response to the changed financial conditions. Household portfolio balances tend to adjust next, first as asset prices adjust, and then as actual sales of positions to other sectors are accomplished. The last element to change is the production structure, and this adjustment takes the most time of all, especially if the portion of the capital stock overbuilt is a long-lived durable asset that depreciates slowly, like housing.

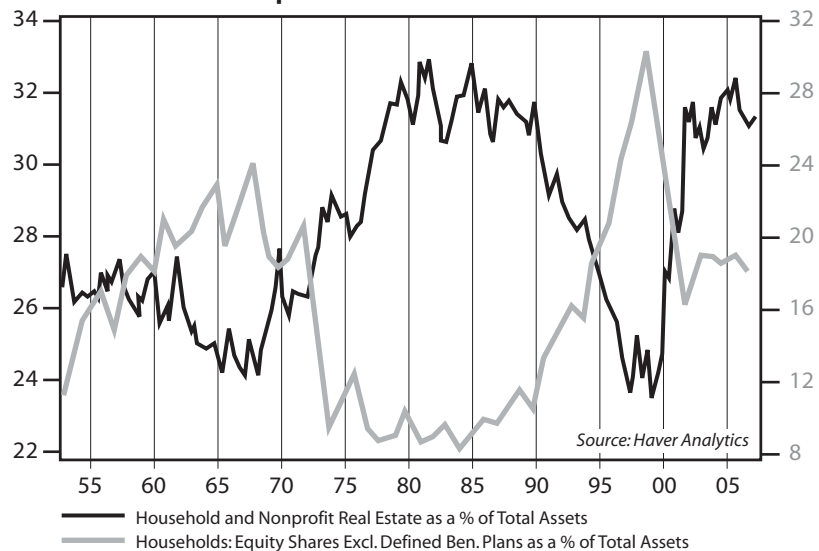
Given the above chart depicting distortions across financial and real factors, as well as across income statements and balance sheets, where do we stand? The housing contraction is well under way, with the residential share of GDP already near prior recession lows. The gross personal savings rate no doubt has further to rise. The financial balance response of the household sector is also under way, but deficit spending by this sector is still only halfway back to zero at best. The contraction of consumer spending growth has further to go, especially as the credit crunch deepens in response to the ongoing financial crisis. Household portfolios have only just begun to adjust, and the capital stock adjustments will be with us for some time. We are not yet out of the rabbit hole.

In other words, asset bubbles and credit booms tend to leave long tails once they reverse. Under such circumstances, instantaneously adjusting markets that shunt the economy back to a full employment growth path are a fantasy best left for academic blackboards. Flow imbalances induced by prolonged financial market distortions take time to work themselves out, and capital stock overhangs, as well as portfolio imbalances, take even longer. In fact, Dr. Richebächer would undoubtedly be the first to point out that the significant decline in the share of the capital stock that is devoted to private capital equipment and software does not bode well for the ability of the U.S. economy to export its way out of its massive trade deficit. Exporting houses is no easy trick (although some U.S. real estate will undoubtedly be sold off to foreigners), so the recent overbuilding of the housing stock leaves a legacy that constrains the ability of the U.S. economy to grow its way out of its various financial and real side imbalances.

THE FINANCIAL OUROBOROS: WHEN THE SNAKE EATS ITS OWN TAIL

The promise of the new financial architecture (NFA) was that by slicing, dicing, securitizing, recombining, rating, leveraging and hedging bank loans to businesses and households, financial risks would be better customized, more efficiently priced and more effectively disbursed through the financial system. Not only would risk be placed in more appropriate and sophisticated hands, but the dispersion of risk away from banks would increase the resiliency of the financial system as a whole.

Portfolio Exposures Distorted



As various tests to the NFA appeared to validate this perception along the way, competition between financial institutions virtually ensured a migration out of the risk spectrum would occur, and the levels of acceptable leverage applied to the original borrowers, the issuers, as well as ultimate investors would only rise.

The leveraging of Wall Street firms, monoline insurers, insurance companies, hedge funds and other institutional investors under the NFA became phenomenal. The layering of debt upon debt within the financial sector took on unimaginable proportions, with the Fed's own Flow of Funds data (which we suspect will eventually be shown to drastically undercount this development) showing that by 2007, debt of the financial sector itself had reached a dollar value in excess of 50% of the private capital stock! These were liabilities used to position financial assets on portfolios — they were simply pieces of paper that were claims on other pieces of financial paper. It is for this reason — the pyramiding of claims within the financial sector itself — that many investors, economists and policymakers remained befuddled by the alarming decay in the ratio of income generation to debt issuance. The so-called “productivity of debt” collapsed because debt was being issued to buy other financial liabilities rather than to fund production or consumption of goods and services.

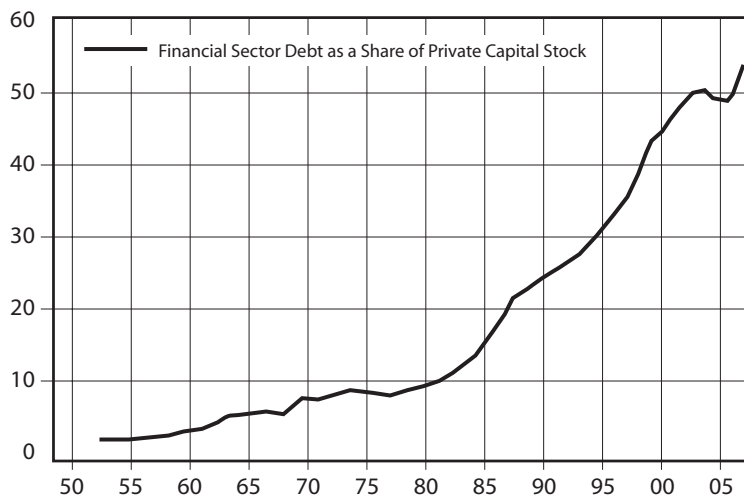
Since conventional wisdom held that markets price more efficiently and that certainly more frequently than committees of bank loan officers, and market prices tend to correctly reflect fundamentals over time, the distribution of financial activity away from banks toward financial intermediaries that mark their assets to market much more frequently than banks appeared to be a stroke of brilliance. But such strokes of financial brilliance have an odd way of coming with unintended, or at least unforeseen, consequences.

In a paper presented at the Fed's Jackson Hole, Wyo., proceedings this summer, a New York Fed researcher and a Princeton economics professor concluded the following unintended consequence of the NFA might pose a little problem:

The current credit crisis has the distinction of being the first post-securitization crisis... the increased importance of intermediaries that mark balance sheets to market both sharpens and synchronizes the responses, giving more impetus to the feedback effects on the real economy. The potential for adverse real effects are especially strong when banks respond to credit losses or the onset of more turbulent conditions by cutting their exposures, reducing lending and charging higher risk premiums... Fluctuations in the balance sheet size of security broker-dealers... appear to signal shifts in future real activity better than the larger commercial banking sector.

Relying on financial institutions that reprice the assets they hold in their portfolios on a frequent basis to prevailing market values sounds smart enough — until one remembers that growth of these balance sheets is itself intimately linked to the size of their capital positions. Given the generally shorter maturity and more liquid nature of their liabilities, this will tend to mean that during asset price bubbles, their capacity to create credit expands as a multiple of the increase in their net worth. Authors Tobias Adrian and Hun Song Shin draw this point out in more detail in the following excerpt from their Jackson Hole paper:

Calibrating the Escalation of Leverage in the Financial Sector



Source: Haver Analytics

The balance sheet dynamics of financial intermediaries that mark their balance sheets to market have some distinctive features... The first striking feature is that leverage is procyclical in the sense that leverage is high when balance sheets are large... When leverage is procyclical, the demand and supply response to asset price changes can amplify shocks. To see this, consider an increase in the price of assets held widely by leveraged market players and intermediaries. The increase in the price of assets strengthens the players' balance sheets, since the net worth of levered players increases as a proportion of their total assets... To the extent the intermediary wants to avoid holding too much equity (for instance, because return on equity is too low), it will attempt to restore leverage.

Adrian and Shin pinpoint the fatal flaw in the conventional mark-to-market wisdom at the foundation of the NFA. Competitive pressures, along with the demands of shareholder interests to maximize ROE and, hence, maximize equity price levels, dictate that financial institutions maximize their leverage, or die. On the way up, this creates a wonderful positive feedback mechanism that can turbocharge asset prices, credit growth and perhaps economic growth, as well, in precisely the manner that Adrian and Shin identified before their central banking peers at Jackson Hole.

On the way down, however, the adjustment process can become quite problematic. A fall in asset prices will reduce the net worth or capital of the financial institution that marks its portfolio to market frequently, and this in turn will reduce the ability of the firm to use leverage. In the extreme, when falling asset prices and financial deleveraging leads to illiquidity in segments of asset markets, or when these same financial institutions find it harder to roll over and renew their short-term liabilities because of capital adequacy questions or heightened investor risk aversion, forced asset sales can set off a snowball effect, as identified in a second paper delivered at Jackson Hole by former advisor to the Bank of England, Willem Buiter:

Funding illiquidity and market illiquidity interact in ways that can create a vicious downward spiral... Faced with the disappearance of normal sources of funding, banks or other financial institutions sell assets to raise liquidity to meet their maturing obligations. With illiquid asset markets, these asset sales can trigger a sharp decline in asset prices. Mark-to-market valuation, accounting and reporting requirements can cause capital ratios to fall below critical levels in other institutions, or may prompt margin calls. This prompts further asset sales that can turn the asset price decline into a collapse.

Beyond a certain corridor of stability in asset prices, then, the NFA was fatally flawed by design. During asset price booms, financial institutions were driven by competitive pressures and shareholder short-run return maximization demands to escalate their use of leverage. During asset price busts, the endogenous deleveraging required by shrinking capital positions begged a vicious cycle outcome along the lines of the paradox of deleveraging emphasized by Irving Fisher and discussed in the last *Richebächer Letter*. The image of the mythical ouroboros — a snake catching its tail and then devouring itself — is perhaps the most appropriate gestalt for making sense of the reason why the NFA is now catastrophically collapsing before our eyes.

THE CORRUPTION OF MARKET DISCIPLINE

In general, our system relies on market discipline to constrain leverage and risk taking by financial firms, supplemented by prudential oversight when government guarantees (such as deposit insurance) or risks to general financial stability are involved. However, the enormous losses and writedowns taken at financial institutions around the world since August, as well as the run on Bear Stearns, show that, in this episode, neither market discipline nor regulatory oversight succeeded in limiting leverage and risk taking sufficiently to preserve financial stability.

So testified Fed Chairman Bernanke on July 8, 2008, before Congress. The foundation of the NFA was built on the premise that market discipline was a powerful force to be marshaled in the provision and pricing of financial products and services, and it was a relatively incorruptible force, at that. Anyone perusing financial news headlines

over the past year may be forgiven for asking the obvious question, what market discipline?

Over a quarter century of financial market deregulation has been based on this conviction and unquestionable faith in market discipline. Yet by the summer of this year, the reality of the situation could no longer be denied by the chairman of the Federal Reserve. Certainly, after the failure of Lehman and Bear Stearns, (not to mention the wreckage found in the housing market across the land), the scales had fallen from most investors' eyes, as well. Market discipline, in fact, had become corrupted and complicated in ways the vice chairman of the Federal Reserve, Donald Kohn, was willing to acknowledge at a Brookings Institution conference on Sept. 11, 2008:

One reason for the loosening of standards was the expectation that house prices would continue to rise — and even more certainly, that they could not fall in all regions at the same time, supporting diversification through securitization. Rising prices would enable lenders to recoup their funds, even if the borrower was unable to service the loan, mostly because the borrower would be able to obtain extra cash through refinancing. Expectations of house price appreciation facilitated and interacted with the increasing complexity of mortgage securities, including multiple securitizations of the same loan, which made it virtually impossible for ultimate lenders to monitor the creditworthiness of borrowers — a task they, in effect, had outsourced to credit rating agencies. The absence of investor caution and due diligence was especially noticeable for the highest-rated tranches of securitized debt.

So the Greenspan doctrine of asymmetrical central bank intervention in asset bubbles came home to roost. The experience of serial asset bubbles changed creditor expectations to presume long-lived asset price runs in determining acceptable lending standards. Ponzi finance (the need for perpetual capital gains in order for debt to be adequately serviced) became the new convention for extending credit. As Buiter put it bluntly in his Jackson Hole paper:

Operationally, the asymmetry is that there exists a panoply of liquidity-enhancing, credit-enhancing and capital-enhancing measures that can be activated during an asset market bust or a credit crunch, to enhance the availability of credit and capital and to lower its cost, but no corresponding liquidity and credit restraining and capital diminishing instruments during a boom.

In addition, Vice Chairman Kohn recognized and admitted competition within the financial system demanded the construction of complex financial instruments that could not be easily copied and commoditized by competitors — but neither could they be adequately analyzed by rating agencies or final investors. Buiter highlighted this market discipline-eroding feature of the NFA in the following excerpt from his Jackson Hole paper:

Modern financial systems tend to be a convex combination of the tradition ROM (relationship-oriented model) and the transaction oriented model of financial capitalism (TOM). The TOM (also called arms'-length model or capital markets model) commoditizes financial interactions and relationships and trades the resulting financial instruments in OTC markets or in organized exchanges. Securitization of mortgages is an example. This makes the illiquid liquid and the nontradable tradable...

It also destroys information... This reduces the incentive to collect information on the creditworthiness of the ultimate borrower and to monitor the performance of the borrower over the life of the loan. Securitization and resale then misplaces whatever information is collected: After a couple of transactions in RMBS, neither the buyer nor the seller has any idea about the creditworthiness of the underlying assets... Inappropriate securitization permitted, indeed encouraged, the subversion of ordinary bank lending standards that was an essential input in the subprime disaster in the US.

We can add the following items to the list of elements eroding any pretense of market discipline under the NFA:

1. The originate and distribute business model: Securitization of loans meant the originators of the loans were incentivized to produce new loan volume and generate fee income while ignoring the usual due diligence on credit default risk;

2. The overreliance on credit rating agencies as a reasonable substitute for credit analysis on complex instruments, given the fact they were paid by issuers, so their incentive structure was skewed to presenting the offerings of issuers in the most favorable light possible;
3. The competitive pressures in the institutional investment world that encouraged a focus on delivering investment returns over time horizons ridiculously short in light of the long-dated liabilities (pension funds, university endowments, etc.) being managed;
4. The shift in compensation structures as investment banks went from partnerships to public companies: a winner-take-all, pirate-like culture took root among key investment professionals; and
5. The prevailing bias introduced by value at risk-based risk management systems that encouraged many investment strategies designed to construct instruments that booked insurance like premiums while ignoring the eventual arrival of what is known as tail risk, usually of sufficient size to wipe out much of the cumulative value of the prior premiums earned.

This represents, at best, a partial list of the many developments that emerged under the NFA that severely eroded the possibility of asset and credit markets disciplining themselves in any reasonable fashion. Market discipline was undoubtedly eroded by the asymmetric response of the Fed to asset bubbles adopted and defended by the Greenspan Fed. Market distortions were undoubtedly introduced by keeping the fed funds rate too low for too long. But to ignore the shifts in behaviors, incentive structures and institutional arrangements that developed within asset and credit markets over the years and deeply corroded any semblance of market discipline, is delusional.

ON TO THE GREAT REREGULATION

In a world of businessmen and financial intermediaries who aggressively seek profit, innovators will always outpace regulators; the authorities cannot prevent changes in the structure of portfolios from occurring. What they can do is keep the asset-equity ratio of banks within bounds by setting equity-absorption ratios for various types of assets. If the authorities constrain banks and are aware of the activities of fringe banks and other financial institutions, they are in a better position to attenuate the disruptive expansionary tendencies of our economy.

— Hyman Minsky, *Stabilizing an Unstable Economy*, 1986

Market discipline failed. It failed catastrophically. It failed because incentive systems that were clearly incompatible with anything resembling market discipline evolved out of market interactions, repeated asymmetric monetary policy responses to asset bubbles, and financial market deregulation. These incentive systems were allowed to evolve because of the prevailing opinion that financial market pricing is efficient and financial markets are largely capable of self-regulation. These practices were believed to be serving shareholder interests. Or so the story was told.

It is overly simplistic at best to explain away the past decade and a half of asset bubbles in equities, bonds, real estate and more recently commodities as the sole result of the Fed getting one ultra short-run rate, the fed funds rate, repeatedly wrong. Asset market dynamics have become distorted and deranged by the rewarding of shortsighted, system eroding behaviors.

Investors, in fact, eventually do uncover the presence of asset bubbles and credit booms, and asset prices and interest rates do adjust enough to eventually strip naïve longs of their illusions, as well as their net worth. But in the interval between the initial departure of asset prices from fundamental values and the eventual discovery and unwinding of an asset bubble, two forms of distortion are allowed to build up, and these distortions can prove especially destabilizing to the economy as a whole.

The first distortion is direct: As the asset bubble proceeds, private sector portfolios become more and more lopsided in their exposure to the rapidly appreciating asset class. In addition, borrowing is often ramped up against a perceived permanent shift in the inflated net worth or collateral values resulting from an asset bubble. The second

distortion is somewhat indirect: As the asset bubble inflates, both the mix of the capital stock and the allocation of productive resources are skewed toward the production and accumulation of the asset whose financial titles are being inflated away from fundamentals.

There is a price to the massive resource misallocation that accompanies asset bubbles, and it is a price paid in the currency of unutilized capital stock, unmet financial commitments and unemployed skilled and unskilled workers. The lag involved between the onset of the asset bubble and the eventual eruption of market discipline allows a buildup of distortions to financial portfolios, the tangible capital stock, the employment mix, resource allocation and productive activity of no small consequence. Market adjustments of these multiple distortions are hardly instantaneous and short-lived, in clean textbook fashion, nor is the impact of capital loss recognition, balance sheet deleveraging, order cancellations, production pullbacks and layoffs restricted to the sectors and investors most ardently participating in the bubble.

The ripple effects of violent shifts in acceptable norms for leverage can be widespread, and the transition to a more sensible mix of the capital stock can take time and can be far from smooth. These ripple effects are especially far from trivial when the private sector as a whole has pursued a persistent deficit spending path — a path which requires constantly appreciating asset values to insure access to the debt required to finance the deficit spending. They are also far from trivial when financial intermediaries like broker dealers, hedge funds and other institutional investors are taking highly leveraged, very complex positions — often confusing liquidity conditions with the excessive use of leverage, at least until the ability to leverage is curtailed.

A regulatory quid pro quo for extending liquidity facilities beyond the range of commercial banks will be required by the Fed. Various proposals are already flying around that would require higher capital ratios across the board (a common-sense approach suggested by Minsky 22 years ago) and, often, procyclical capital ratios — that is, financial institutions would be required to raise equity in relation to assets held during an economic expansion, and they would be allowed to lower them during a recession. Off-balance sheet activity is likely to be banned — after all, what is the purpose of having a balance sheet that is incomplete? The ability of banks to pursue and originate and distribute business models is likely to be severely curtailed, as securitization removed the need for serious credit analysis, while encouraging banks to take a fee and, hence, loan volume maximization approach to lending. Either over-the-counter markets are likely to be severely curtailed, or adequately capitalized clearing houses will be required at a minimum. Rating agencies will have to find a way to be paid by the consumer of the ratings, not the issuer of the rated instruments. These are only a few of the sea changes likely waiting in the days ahead.

The end result of a financial sector reregulation along these lines will tend to preclude the generation and perpetuation of asset bubbles and credit booms. As such, the possibility of bubble-based economic growth will be reduced, as well, and with it, we suspect, will come less of a risk of runaway inflation. That's the likely secular result of the collapse of the NFA. The cyclical result is the more pressing challenge in the days ahead. Profit income deflation already began earlier in 2008. Growth in final sales to domestic purchases is fast approaching deflationary territory. Asset price deflation is visible in housing, equities and corporate bonds, and in all the esoteric structured finance flotsam thrown up on the beach by the housing bust. The heightening of the financial crisis in recent weeks reveals that we've already gone down the rabbit hole. The risk of a debt deflation process setting in, even in the face of unimaginable and desperate Fed and Treasury moves, cannot be ignored as we drop down the rabbit hole.